Ameren Illinois Company d/b/a Ameren Illinois

MODERNIZATION ACTION PLAN

Infrastructure Investment Program

2012-2021

Attachment 3: Additional Tracking Mechanisms

April 1, 2020

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Background

In addition to the tracking mechanisms as reported in the AMI update as filed with the ICC, Ameren Illinois has agreed to voluntarily report additional tracking mechanisms as proposed by the Citizens Utility Board (CUB) in conjunction with the Environmental Law & Policy Center (ELPC) and the Environmental Defense Fund (EDF). As stated, the work and activities described below are a voluntary undertaking on the part of Ameren Illinois. Recognizing changing circumstances that may affect the propriety of tracking the subject information, or where provisions of the enabling statutes are no longer operative, Ameren Illinois reserves the right to modify, delete, or add to any of the provisions described below, and the right to terminate any or all of the undertakings.

Ameren Illinois has participated in several discussions with these stakeholders and has agreed to report the following additional items in its annual update of the Infrastructure Investment Plan.

1. The number, type, and total MW of utility owned energy storage devices connected to the Ameren Illinois electric grid.

2. The number and percentage of Transmission, High Voltage Distribution (Bulk), and Distribution substations controlled and/or monitored via Supervisory Control and Data Acquisition (SCADA) systems.

3. The number and percentage of distribution circuits (69 kV, 34 kV, 12 kV, and 4 kV) equipped with remotely controlled and/or monitored devices.

4. The number of meters per automated three phase 12 kV line segment. An automated line segment is defined as a 12 kV three phase mainline circuit between two automated devices.

5. Provide a list by major device category of the types of remotely accessible devices that Ameren Illinois has deployed or has approved for deployment on its electric distribution system, and the predominate manufacturers of these devices.

2019 Year End Information

ITEM #1

- The number, type, and total MW of utility owned energy storage devices connected to the Ameren Illinois electric grid.

2019 Data Summary:

Ameren Illinois Company currently owns two energy storage devices. A 0.25MW LG Chem JHS Lithium-Ion unit with a S&C Electric SMS-250 Energy Storage Controller was installed in 2016. A 1MW LG Chem JHP-2P rack configuration Lithium-Ion unit with a S&C Electric SMS- 1.0 MW Energy Storage Controller was installed in 2017.

ITEM #2

- The number and percentage of Transmission, High Voltage Distribution (Bulk), and Distribution substations controlled and/or monitored via Supervisory Control and Data Acquisition (SCADA) systems.

Definitions: The below definitions are meant to provide clarification as to the substation classification in regards to Item #2 tracking only. Only AIC owned station class substations will be included. Pole mounted facilities will not be included.

- **Transmission Subs** will be defined as a substation where the high voltage (HV) and low voltage (LV) sides on the same transformer(s) are above 100kV.
- **Bulk Subs** will be defined as substations where the HV side of a transformer is above 100kV and the LV side of the same transformer(s) is a high voltage distribution (HVD) level and serves >1 customer.

- **Distribution Subs** will be defined as substations where the LV side of a transformer is a primary voltage distribution (PVD) level voltage and serves >1 customer. Substations with a HVD to HVD transformation only will also be included.
- **Single Customer Subs** will be defined as any substation serving only 1 customer where Ameren owns the transformation.
- **Switching Stations** will be defined as a location where only switching activities are present, no grid related transformation present. They will fall into their own category. A Substation classification will always be treated as higher than a switching classification. For example, a feed through 138kV bus serving a 138kV/12kV transformer would be a distribution substation, not a transmission switching station.
- **Multiple Category Subs** will be defined as substations fitting two or more of the above definitions.
    - Multiple category subs will default to the higher substation in the hierarchy for the purpose of this tracking.

2013-2019 Data Summary:

	Sub Type	Total #	# With SCADA	% With SCADA
2013	Transmission	31	31	**100%**
	Bulk	129	129	**100%**
	Distribution	745	358	**48%**
	Single Customer	247	21	**9%**
	Switching Station	57	55	**96%**
2014	**Sub Type**	**Total #**	**# With SCADA**	**% With SCADA**
	Transmission	31	31	**100%**
	Bulk	129	129	**100%**
	Distribution	739	422	**57%**
	Single Customer	246	22	**9%**
	Switching Station	57	55	**96%**
2015	**Sub Type**	**Total #**	**# With SCADA**	**% With SCADA**
	Transmission	31	31	**100%**
	Bulk	131	131	**100%**
	Distribution	746	468	**63%**
	Single Customer	248	23	**9%**
	Switching Station	59	56	**95%**
2016	**Sub Type**	**Total #**	**# With SCADA**	**% With SCADA**
	Transmission	31	31	**100%**
	Bulk	133	133	**100%**
	Distribution	746	496	**66%**
	Single Customer	245	24	**10%**
	Switching Station	62	60	**97%**
2017	**Sub Type**	**Total #**	**# With SCADA**	**% With SCADA**
	Transmission	31	31	**100%**
	Bulk	133	133	**100%**
	Distribution	745	512	**69%**
	Single Customer	243	26	**11%**
	Switching Station	64	61	**95%**
2018	**Sub Type**	**Total #**	**# With SCADA**	**% With SCADA**
	Transmission	33	33	**100%**
	Bulk	136	136	**100%**
	Distribution	768	552	**72%**
	Single Customer	229	51	**22%**
	Switching Station	65	57	**88%**
2019	**Sub Type**	**Total #**	**# With SCADA**	**% With SCADA**
	Transmission	32	32	**100%**
	Bulk	134	134	**100%**
	Distribution	743	580	**78%**
	Single Customer	321	106	**33%**
	Switching Station	64	57	**89%**

ITEM #3

- The number and percentage of distribution circuits (69 kV, 34 kV, 12 kV, and 4 kV) equipped with remotely controlled and/or monitored devices.

2013-2019 Data Summary:

	Distribution Type	Total #	# Rem Cntrl/Mon	% Rem Cntrl/Mon
2013	High Voltage	548	498	91%
	Primary Voltage	2207	1253	57%
	Distribution Type	**Total #**	**# Rem Cntrl/Mon**	**% Rem Cntrl/Mon**
2014	High Voltage	542	507	94%
	Primary Voltage	2214	1433	65%
	Distribution Type	**Total #**	**# Rem Cntrl/Mon**	**% Rem Cntrl/Mon**
2015	High Voltage	542	516	95%
	Primary Voltage	2224	1564	70%
	Distribution Type	**Total #**	**# Rem Cntrl/Mon**	**% Rem Cntrl/Mon**
2016	High Voltage	524	518	99%
	Primary Voltage	2223	1616	73%
	Distribution Type	**Total #**	**# Rem Cntrl/Mon**	**% Rem Cntrl/Mon**
2017	High Voltage	527	525	99.6%
	Primary Voltage	2226	1664	75%
	Distribution Type	**Total #**	**# Rem Cntrl/Mon**	**% Rem Cntrl/Mon**
2018	High Voltage	531	525	98.9%
	Primary Voltage	2229	1672	75%
	Distribution Type	**Total #**	**# Rem Cntrl/Mon**	**% Rem Cntrl/Mon**
2019	High Voltage	558	553	99.1%
	Primary Voltage	2263	1719	76%

ITEM #4

- The number of meters per automated three phase 12 kV line segment. An automated line segment is defined as a 12 kV three phase mainline circuit between two automated devices.

2012-2019 Data Summary:

	@End of Service Year Shown							
	2012	2013	2014	2015	2016	2017	2018	2019
Average # Customers Per Segment-ITR/Viper	618	564	643	602	571	562	562	587
# of ITR/Viper Segments	29	42	131	248	343	421	436	447
Total Customers in an ITR/Viper Segment	17,911	23,698	84,278	149,303	195,910	236,884	244,938	266,163

ITEM #5

- Provide a list by major device category of the types of remotely accessible devices that Ameren Illinois has deployed or has approved for deployment on its electric distribution system, and the predominate manufacturers of these devices.

Definitions:

- **Remotely accessible** is defined as a device with either remote indication and/or remote control capabilities.

2019 Data Summary:

Device	Category	Approved Manufacturers
Substation Metering	Metering	SATEC
Automated Reclosers	Control/Indication	S&C, G&W, ABB, Sch. Elect.
Automated Switches	Control/Indication	SEECO, Southern States, Turner, S&C
Automated Cap Controls	Control/Indication	S&C, Beckwith, SEL
Automated Reg Controls	Control/Indication	SEL, Cooper, Beckwith
FCIs	Indication	Cooper, PDP, Telemetrics
Relays	Meter/Indication/Data	SEL
Remote Terminal Units	Control/Data/Indication	L&N, Harris, GE, CDC, SEL, NovaTech
Automated Network Protectors	Control/Indication	Eaton
Automated Sectionalizer	Control/Indication	G&W